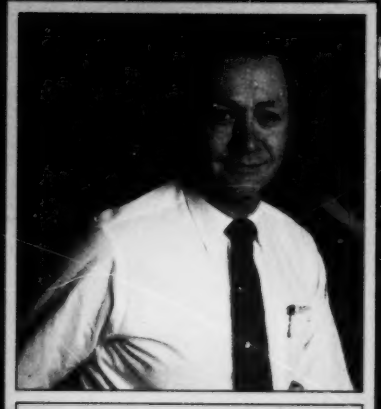
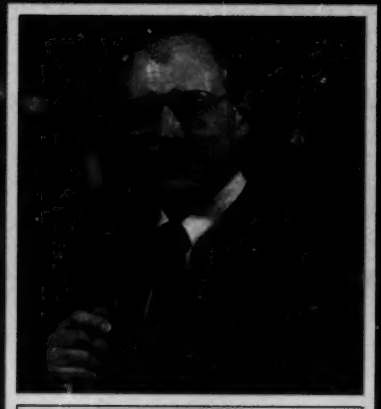
DATAMATION
MARCH 1, 1988
A CAHNERS PUBLICATION

Managing IS At Multinationals

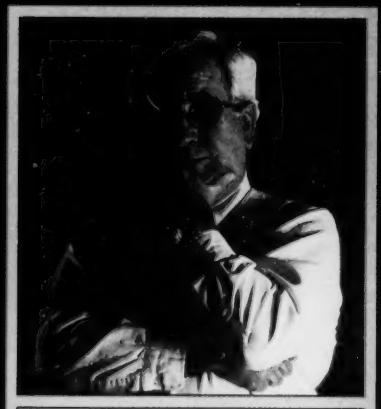
LEADING EXECS FIND NEW WAYS TO SPAN THE GLOBE—PROFITABLY



American Standard's Biddle enlists CEO support



Du Pont's Higgins depends on SQL



Bethlehem Steel's Fugere organizes SWAT team

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- MVS/XA EXTENSIONS ARE ON THE WAY
- DEC-APPLE: SEEDS OF SOMETHING BIG
- WORKSTATION GRAPHICS BLOSSOM
- U.S. CAR MAKERS BET ON CIM

DATAMATION 88 CONNECTIVITY SURVEY

DATAMATION

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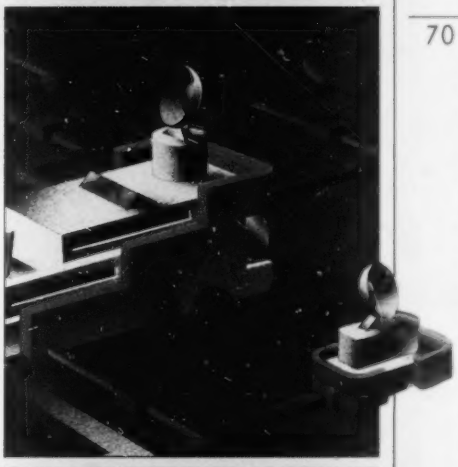

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Having the right data in the right amount in the right place at the right time is the secret of success for multinational firms. While a simple telephone connection to Memphis satisfied Chuck Berry's cry to "Help me information," today's executives won't be so easily assuaged. Enlightened management, SQL and EDI, and enterprisewide alliances are the keys for IS.

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BY PARKER HODGES
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In big business society, this year's star debutante is workstation graphics. Suitors are wooed by the enticements of nimble, powerful programs running on workstations and 386-based pcs, which lead some to believe they can lose their IS pro chaperone and score on their own.

ION

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-1 **Hannover Dynasty**
BY PAUL TATE
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-9 **The German Connection: A User Roundtable**
West German IS execs look ahead and see an economic slowdown, look back and see an unwieldy telecom authority, and all the while must justify budgets internally. This DATAMATION roundtable explores how they create effective IS operations in this environment.

Cover photo by Barry Blackman; Biddle photo by Jonathon Levine/Onyx; Higgins photo by Terry Zabala/Picture Group; Fugere photo by Brad Bower/Picture Group.

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1988 JESSE H. NEAL AWARD

1987 JESSE H. NEAL AWARD

Editorial

Enter the Connectivity Game or Begone

If you manage an enterprise that lacks a dedicated game plan for connecting the dissimilar but crucial information technology systems that have found their way into your plants, offices, and warehouses in the past few years, consider yourself in the minority. You may also consider looking for a new job—your current employer may soon be out of business.

Technology itself will not run your company or institution off the playing field. Improper management of pcs, minis, and mainframes and the communications and software glue that connects them certainly will. That's because firms and agencies guilty of such techno-mismanagement will lose contests to competitors that have gone through the pains of devising an enterprisewide connectivity strategy and are now implementing it. Victory will come particularly swift for those who grapple with pcs and LANs, two technologies that hold tremendous leverage potential.

Such advice is hardly earth-shattering. Yet, four out of 10 users *lack* coherent connectivity strategies, according to an exclusive DATAMATION survey of 2,000 U.S. computer sites (p. 70). The most impoverished are computer users in education and banking—a chilling thought to anybody who believes America's schools hold the cure to its competitive malaise, and a frightening one to anybody who depends on interstate funds transfers. The most confused are transportation professionals—one out of five doesn't even know whether his or her company or agency has a connectivity plan. Such users should consider attendance mandatory at the upcoming CONNECT '88 conference (March 8-10 in New York) or at any other worthwhile communications and software conferences.

While we're on the subject, DATAMATION has connected with another Neal award—our second in two years. The award, the highest honor in the U.S. business press, was presented last week to international editor Paul Tate, managing editors David Brousell and Parker Hodges, and Washington bureau manager Willie Schatz for their insightful reports on computing in the Soviet Union and China (see "The USSR's Dp Chief Talks," March 15, 1987, p. 43, and "The China Syndrome," Sept. 1, 1987, p. 33).

Tim Mead

TIM MEAD
EDITOR-IN-CHIEF

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Letters

IBM Unalloyed?

This letter is in reference to an item which appeared in "Look Ahead" (Dec. 1, p. 12) that states, "Alloy ceo Joseph Saliba tells DATAMATION he is currently in negotiations with Armonk executives for Alloy's 40MB tape storage backup system designed for IBM's PS/2."

We have no comment or information on the relationship between Alloy Computer Products Inc. and IBM. Furthermore, Alloy Computer Products has not made any public statement to anyone with regard to a relationship between the companies.

JOSEPH R. SALIBA
President
Alloy Computer Products
Framingham, Mass.

Community Action

I read with interest "The Tough Search for Telecom Talent" (Dec. 1, p. 65). Relative to the sidebar headed "School's Out," I note that community colleges are strangely absent from the list of colleges and universities offering data communications training. Community colleges are especially well suited to the job of preparing technicians for the datacom industry and should not be overlooked. However, a similar problem exists in that community colleges have not been willing to build datacom programs.

Catonsville Community College is an exception in that it offers the only program in the state of Maryland leading to a Data Communications degree and certificate. Courses included in the program are: Introduction and Advanced Data Communications; Distributed Data Processing; Basic Electronics; Office Automation Systems; and Analysis and Design of Data Communications Systems. This last course includes data network simulation prepared by the students using the facilities of a large mainframe-based system. We hope your article will begin to direct attention to the need for higher education to respond to this important industry segment.

WALLACE C. KNAPP, CSP
Director of Computer Services
DARRELL Z. GOBEL, CDP, CSP
Coordinator, Data Communications Technology
Catonsville Community College
Catonsville, Md.

SAS, Not IBM

We were pleased that the SAS System was mentioned in "Resolving Family Conflicts Is This Lawyer's Forte" (Nov. 15, p. 155). However, the article mistakenly identifies the SAS System as a product from IBM. The SAS System is, and always has been, the flagship product of SAS Institute Inc.

SALLY A. ROBERSON
Media Communications Specialist
SAS Institute Inc.
Cary, N.C.

Integration

I was pleased to see DATAMATION's recognition of trends toward commercial systems integration in "Private Sector Systems Integration" (Dec. 1, p. 77). CSI will emerge as one of the major "events" to impact upon your readers in the decade to come. Driven by a combination of rapid technological change, the true integration of computers and communications, and the end user's insistence on guaranteed results from his increasingly large investments, CSI will have a dramatic impact on the information industry.

PETER SANDIFORD
President
Systemhouse Inc.

Correction

Due to an error in the production process, two photos of participants in the roundtable discussion "Dealing with DEC" (Feb. 1, p. 60) appeared with switched captions. Our apologies to Tom Orlowski and Stuart Lewis. Here are the photos with the correct identifications.

Tom Orlowski, director of info/resource management
A DEC customer for seven years, Orlowski is in charge of IS at the American Council on Education in Washington, D.C.

Stuart Lewis, controller
Lewis is in charge of finances and technology at Douglas Furniture Corp., a major manufacturer of casual dining furniture in Bedford Park, Ill.

Few words in the world of IS buzz with more intensity than "connectivity." This first DATAMATION Connectivity Survey reveals that the key to connectivity may not be hardware or software. The real driver is an organizational commitment to interconnection. Networking intensity varies widely from industry to industry, and from small companies to large companies.

The DATAMATION Connectivity Survey:

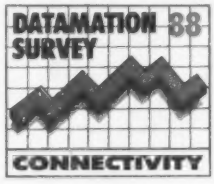
The Haves and Have-Nots

BY PARKER HODGES

"Only connect," wrote E.M. Forster when he sought to describe the secret of the good society. The novelist's dictum apparently applies equally well to the world of information systems. Nearly six out of 10 respondents to an exclusive DATAMATION survey of computer systems operators report that their companies have strategic plans to interconnect fully their computer resources (see "Most Aim for Full Connectivity"). Connectivity may be a widely shared goal among IS pros, but the extent to which reality matches ideals differs widely in U.S. companies.

Strategic plans for full connectivity are most likely to exist in government and military organizations and in service industries, particularly those that specialize in distribution or financial services. When you're talking connectivity, organizations with these strategic plans are clearly the "haves," and those without are the have-nots.

Another message comes through just as clearly. Despite their plans to interconnect, almost seven out of 10 respondents say that crucial pieces of the connectivity puzzle are still missing.



IS sees several barriers to connectivity. Many are not yet convinced that vendors can deliver what's needed to tie everything together effectively. Vendors have cried "New improved wolf!" several times too often. Even among the IS pros who suspect the solution they want is already out there somewhere, many say that, right now, complete implementation is impossible. It is prevented either by distrust of vendor claims, technological complexity, political barriers within user organizations, or by proprietary barriers to standardization (see "What's Missing, What's Not").

Companies that have strategies for full interconnection differ from those without them in important ways. The haves are more likely to be running departmental minicomputers than the have-nots. Having an interconnection strategy also indicates that an organization may already have introduced some sophisticated communications protocols. For example, X.25 packet switching capabilities and X.400 electronic mail systems are found four times more often in organizations with strategic interconnection plans. And, indicative of the maverick mind-set of some of its users, Macintosh computers are a bit more likely to be found in organizations that don't have a strategic plan for full interconnection. But the Mac is not an isolated machine. A large percentage of the installed base of Macs are on networks, and the recent Digital Equipment Corp.-Apple joint development deal is sure to increase Apple's office clout even more.

Another finding confirms the impression that not all traditional mainframe shops are enthusiastic about hooking a universe of end users to the mother machine: by a very narrow margin, organizations with mainframes are more likely to be in the camp without strategies for full interconnection. Still, when asked where within an organization the greatest interest in local area networking is found, MIS handily beats end users: about 37% report MIS is driving LANs; about 28% report the pressure is coming from end users.

Apparently, general and corporate management aren't among those pressing hard for connectivity strategies: respectively, only 9% and 6% of respondents say these officers are the source of greatest LAN interest in their organizations. On the other hand, it is in the hearts of end users that lust for pcs burns most ardently: almost 70% of respondents report that end users have the greatest interest in departmental pcs; only about 17% say MIS has led the way.

The survey results suggest that MIS experiences with connectivity solutions have varied widely. Good news: only 16% of the total sample say that, yes, they had purchased connectivity equipment that failed to meet their expectations. Bad news: from respondents at bigger companies, with more than 5,000 employees, reports of bad experiences with so-called solutions soar to more than 37%.

Plans for an interconnected Utopia aside, just how much connectivity exists in the real world? First, look at the components. The answers to a question asking what percentage of a company's pcs are equipped for communication with minicomputers, mainframes, or other pcs suggest that most companies are either still swimming in the shallow end or are all the way in: 24% say that fewer than 10% of their pcs are equipped for communications; 22% say that between 91% and 100% of their pcs are ready to talk. Another 10% of respondents report that between 10% and 20% of their pcs are communications-ready, and the rest are fairly evenly distributed along the continuum. Pcs owned by the government—both civilian and military—

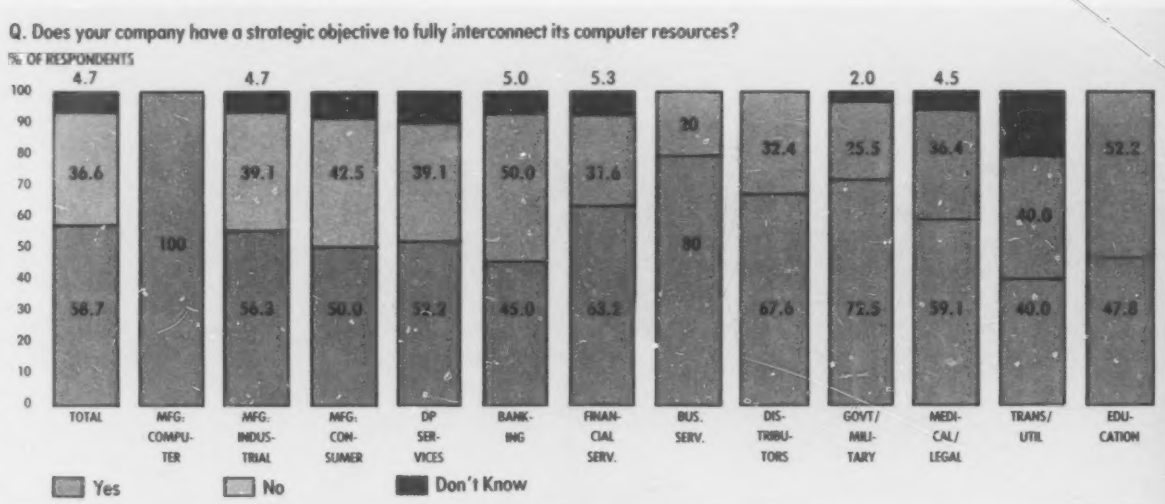
and by IS services organizations are most likely to be capable of communicating with other devices.

Okay. There are a lot of modems out there. But how many users have gone the next step? How many are actually hooked up to local area networks? Here, implementation lags far behind the possible: just shy of 36% of the respondents report that LANs are already installed in their organizations (see "LAN Bandwagon Bypasses Some Industries"). Almost 30% of these local area networks are connected to corporate mainframes. Still, more than half of those without LANs say they have no plans to install the webs within the next five years.

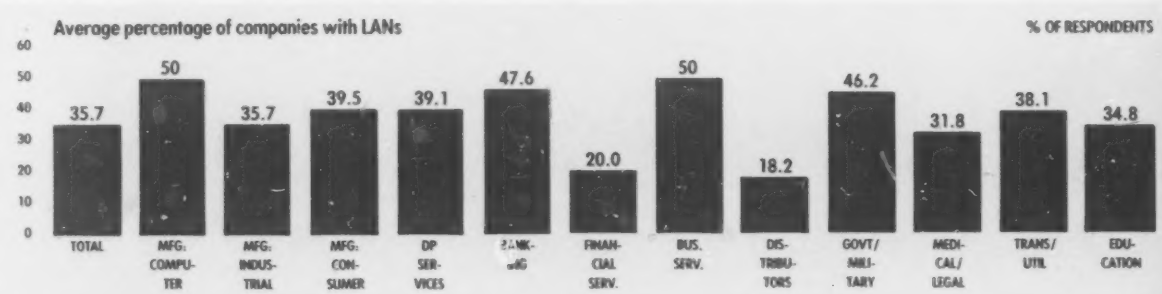
Big Companies More Likely To Have LANs

The size and kind of organization seems to have a lot to do with LAN acceptance. Bigger companies, with more than 5,000 employees, are more likely to have

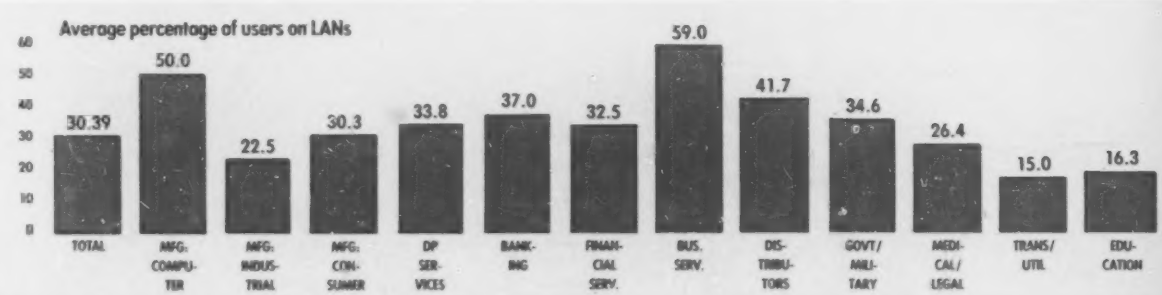
Most Aim for Full Connectivity

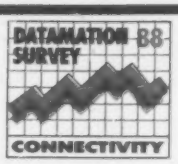


LAN Bandwagon Bypasses Some Industries



Once LANs Arrive, Intensity Varies





LANs: almost 78% of these organizations report they're on the LAN bandwagon. By industry, the most networked organizations are—understandably—computer manufacturers and business services companies. Half of the computer manufacturing companies are networked now, and the rest report they'll have LANs within three years. Business services organizations are sharply divided: while half of them are networking locally, 80% of those not networked say they have no plans to do so in the foreseeable future.

Once LANs have entered a company, how complete is the penetration? On average, just over 30% of computer users are hooked up, with the most intense integration occurring at distribution companies, where 42% of users are networked (see "Once LANs Arrive, Intensity Varies"). But, of those organizations that have installed LANs, more than 63% of the respondents report that fewer than 20% of their users are on a LAN; almost 49% of those report that fewer than 10% of their users are hooked up. Only about 9% say that their organizations have approached total networking, with between 91% and 100% of their users on LANs. (Again, presence of a corporate connectivity strategy makes the difference in networking intensity. In organizations where such a strategy exists, 11.2% report that more than 90% of their pcs are networked. Without such a strategy, only 5% have their pcs this intensely networked; see "The Isolated Pc.")

How local are these local nets? Are these schools of interconnected pcs swimming independently of corporate mainframe data? Or are the LANs connected to the corporate mainframe? Again, the answers vary widely, with bigger companies—those employing more than 5,000—maintaining the technological edge: 50% report their local nets are connected to the corporate mainframe.

Here, too, an interconnection strategy makes the difference. In organizations with these plans, 37% report that LANs are connected to corporate mainframes. Where there is no strategic interconnection plan in place, only 15% have LANs hooked up to the mainframe.

Looking at the LAN-to-mainframe connection on an industry by industry basis, it is no shock that the biggest users of the technology are found in the business and financial services industries, where, respectively, 60% and 53% of LANs are attached to the corporate mainframes (see "The Mainframe Connection").

While the survey shows that the minicomputer has played a major role in distributing computing throughout organizations, these midrange machines are, as often as not, not serving as gateways to higher authorities. Just under 45% of the respondents report that their organizations have minis installed at the departmental level, but fewer than half of this installed base is acting as a gateway to host mainframes. About a quarter of mini owners do plan to use the minis as gateways within the next five years, but more than 70% report they don't see this happening "within the foreseeable future."

The respondents to the survey give some credit to vendors for assistance with both departmental computing and connectivity. Because IBM dominates the computer hardware game, it isn't surprising to find that it was most often mentioned as a helpful vendor. The ranked order of vendors then trails off—for both connectivity and departmental computing—with DEC in second place, followed by Wang, Hewlett-Packard, Unisys, NCR, and Honeywell; "other" handily beat all vendors but IBM. However, no vendor can take comfort from these numbers. More than 49% of the respondents chose to cite no vendor as helpful with connectivity strategies; more than 38% say no vendor has been helpful with departmental computing.

More vivid than percentages were the marginal comments some respondents wrote next to the "helpfulness" question. From a manufacturing systems manager in agribusiness: "We are an IBM shop (sigh!) and have had very little help in either category. IBM's solution is vaporware." And some advice from the IS manager at a Connecticut hospital: "The mini vendor used by the departmental

What's Missing, What's Not

"They all make it sound so easy," complains one IS manager with three items on his connectivity wish list: "security; a uniform, consistent user interface; and a standard file transfer protocol."

Another says, "Too much hype. Show me it works without hiring additional technicians. Ease of use is not there." Still another adds that implementing connectivity usually requires "the involvement of some sort of connectivity 'guru.'"

An overarching concept for connectivity is what another manager finds lacking: "It seems each product concerns itself with just two devices, the receiving end and the transmitting end, ignoring the total picture. The common thread to really tie everything together is still missing." A similar sentiment is found in this comment from another respondent: "Most products depend upon explicit node definition at both ends. There should be just one."

"Connecting pcs and synchronous terminals on a LAN at a reasonable cost," is a top priority for another manager. The same respondent wants "more user-friendly access for pcs acting as terminals to mini/mainframe networks."

One respondent, who identifies "dual-host control units" as one missing link, also complains that "everything is still too disjointed. A seamless interface is necessary. A user shouldn't care where they get data." But the overriding problem identified by the respondents to the survey is the lack of effective standards, particularly when the aim is connecting equipment from more than one vendor. "More standards are needed for greater compatibility."

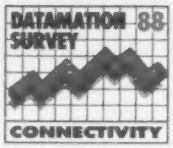
Among the missing connections specifically mentioned are:

- DEC to IBM
- DEC to Hewlett-Packard
- Wang to IBM
- PS/2 as a LAN server for an S/36 gateway
- Macintosh to S/36
- A seamless connection for Data General to Novell LANs

One respondent notes, "We need a product where retrieval on a pc can be done by referring to elements by their data dictionary names."

Says another, "The hardware is there, most of the software is there, but standards and protocols are only at the discussion stage." He adds, "There are many connectivity solutions available, but few are complete and none are particularly elegant."

But some respondents say that everything they need is already available. Says one, "The pieces all seem to be available. The problem is to sort through the mess for a viable long-term solution." And another respondent, with an eye on the budget, says the solutions are there, "if you have the bucks and the patience to analyze the 'big picture' before jumping in."

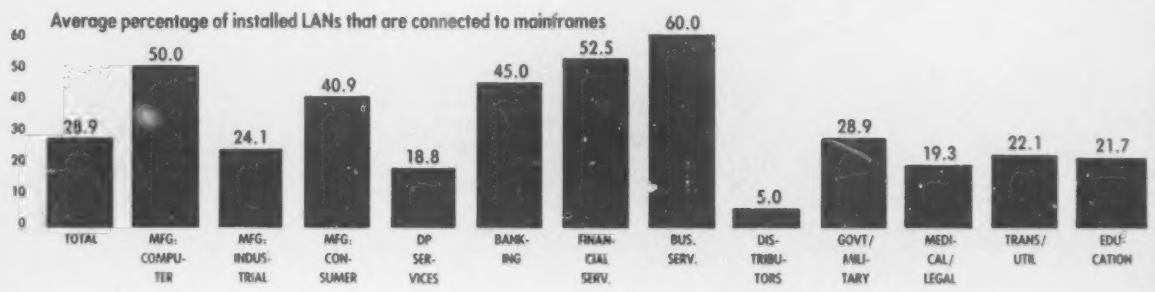


Principal Problems When Downloading Data

	% OF RESPONDENTS										
	TOTAL	MFG: INDUS-TRIAL	MFG: CON-SUMER	DP SER-VICES	BANK-ING	FINAN-CIAL SERV	DIS-TRIBU-TORS	GOVT/ MILI-TARY	MEDI-CAL/ LEGAL	TRANS/. UTIL.	EDU-CATION
User Interface	39.3	28.3	44.1	52.6	63.2	50.0	43.3	43.2	36.8	13.3	29.4
Data Trans-formation	31.7	26.4	11.8	36.8	31.6	43.8	20.0	36.4	31.6	33.3	41.2
Applications	29.3	24.5	41.2	26.3	15.8	50.0	26.7	36.4	26.3	40.0	41.2
Security	29.0	26.4	41.2	26.3	42.1	56.3	16.7	20.5	21.1	26.7	23.5
Control Mechanisms	23.8	17.0	29.4	31.6	42.1	12.5	23.3	22.7	15.8	33.3	17.6
Performance	20.7	20.8	26.5	31.6	21.1	18.8	23.3	18.2	5.3	13.3	23.5
Diversity of Comm. Paths	19.5	15.1	14.7	36.8	5.3	18.8	10.0	22.7	26.3	26.7	23.5
Extract/ Subset	17.7	13.2	26.5	21.1	21.1	18.8	20.0	13.6	10.5	6.7	17.6
Other	5.5	3.8	5.9	-	-	12.5	6.7	9.1	10.5	6.7	5.9

Note: Percentages exceed 100% because of multiple answers.

The Mainframe Connection



software vendor is always more helpful than the mainframe vendor who lost the departmental contract."

Impetus for departmental computing has come from both end users and MIS: respondents report that end users took the lead about 31% of the time, MIS about 29%. One reason MIS is putting its clout behind departmental and end-user computing solutions is that MIS no longer feels threatened by distributed processing: an overwhelming majority of the respondents—85.7%—say that the shift to connectivity and departmental and end-user computing will not displace today's IS professionals.

Indeed, when connectivity has been established within an organization, the real work for IS may have only just begun (see "Principal Problems When Downloading Data"). Still, in commenting on the question, almost everyone said that the shift will change the kinds of work that MIS will do.

Most think that end-user computing will not reduce the need for IS pros. Indeed, the opposite is true. "I think the need for technical support will increase," says one respondent, noting, for example, that most end users don't "read or comprehend documentation."

One respondent describes IS job security this way: "Information management as a resource requires technical knowledge and skills to ensure its reliability, integrity, and shareability." Another points out that most computing end users will be specialists in a particular application. "IS professionals will offer broad expertise to advise these end users." It is the practical considerations that serve to convince other respondents of MIS's continuing clout. "What happens," asks one, "when end users leave the company?"

Many respondents observe, however, that skills focused too narrowly may hurt some people: "For those who know nothing more than how to produce FORTRAN code, there is no future."

Thus, in the brave new connected world, today's bastions will give way to new thoroughfares. But IS will still be in charge of delivering the goods. ■

Methodology. *On Nov. 11, 1987, a four-page questionnaire was mailed to 2,000 computer/systems operations managers, one name per location. On the cutoff date of Dec. 1, 405 replies had been received, representing a response rate of 20.3%. A response rate of this size provides a representative picture of the studied universe.*